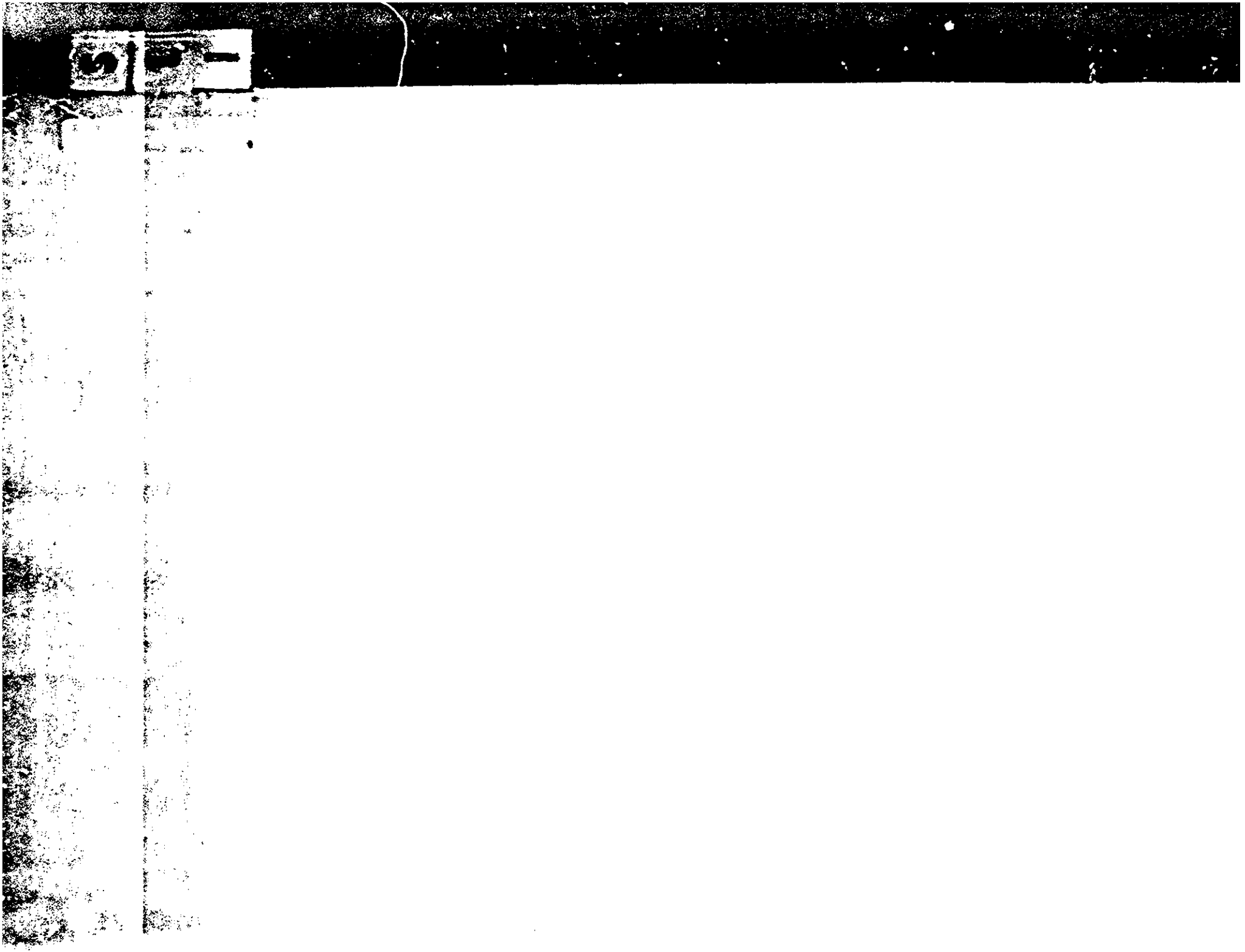

SKYLAB 1 MISSION COMMENTARY 5/14/73 CST 11:00 GET T-1:30:30 MC1/1

PAO This is Skylab Launch Control. We're T-1 hour and 30 minutes in the countdown for the launch of Skylab, America's first orbiting space laboratory. At the T-1 1 hour 30 minute mark, a simulated first motion signal was sent to Houston Flight and to the Air Force Eastern Test Range. The signal, of course, is generated by the first motion of the vehicle down at the end of the countdown. This is a simulated test to ensure that that signal is being sent to Houston and to the range. Houston and the range then will start their plus time clocks on this signal. Also completed recently were preflight command system checks. This ensures that preflight commands sent from the Johnson Space Center in Houston are getting through to the launch vehicle. Over on Pad B, adjacent to Pad A, where the countdown is continuing on the Skylab 2 vehicle, the pad area has been cleared, but the clock continues to count over there. The clock will continue counting until 1:15 PM today. At that time on Pad B and the SL-2 or first manned mission launch, they'll go into a planned hold period. Now, that hold period is planned for 15 minutes, but will vary depending on the exact launch time here at Skylab 1. As soon as Skylab 1 is launched, that will be picked up. The clock will be picked up for Skylab 2. They'll be holding at the T-22 hour and 15 minute mark in their countdown. There is one, actually 2, planned holds in the remaining part of that count. There's a 1 hour and 13 minute hold planned at the T-3 hour and 30 minute mark tomorrow in that countdown. That hold will be used also to adjust the clock to the orbiting laboratory. Once again at the 15 minute mark there will be a short hold, this time for just 2 minutes and that hold also will be used to adjust the time clock and the countdown to the position of the orbiting laboratory. The weather for today's launch continues to look good. Actually, the weather is clearing considerably since earlier this morning when there was considerable cloudiness. Clouds now are broken over the launch pad area. A few scattered clouds is all there are in the area. Wind's from the southeast at 10 knots. Temperatures at launch are expected to be approximately 80 degrees Fahrenheit. The countdown continuing to move smoothly, actually running somewhat ahead of schedule at this time. T-1 hour 27 minutes and counting, this is Kennedy Launch Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 11:30 CST T-1:00:00 CST MC2/1

PAO This is Skylab Launch Control. We're just passing the 1-hour mark in the countdown, now at T-59 minutes 55 seconds and counting. Underway at this time are checks of the C-band beacons aboard the space vehicle. These are two beacons actually located in the instrument unit and they are used in conjunction with ground radars to track the vehicle during the powered phase of flight. At that time they can give, by this tracking, position data, speed, and acceleration. Coming up soon in the countdown will be a critical power transfer test. Up to this point the vehicle has been receiving power from the ground to conserve on the batteries, which are located in the vehicle. We'll make a quick test at this point to ensure that during a crossover to those flight batteries, all systems work well. Then we'll go back to the ground power again. At T-50 seconds in the countdown we'll switch - make a final switchover to the flight batteries. Superintendent of Range Operations just reported to Chuck Henschel with his report on optical coverage from the long-range cameras. And our long-range camera is located at Patrick Air Force Base. That camera is expected to give 100 percent coverage; at the Cape, 90 percent coverage. And as we move north, the bad weather, which was over the Cape area this morning, appears to have settled in around New Smyrna and Daytona. The tracking camera near New Smyrna is expected to yield only 10 percent coverage, and the one about 8 miles north of Daytona is not expected to be able to cover the flight of Skylab. Countdown moving along well. T-58 minutes 24 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SKYLAB I MISSION COMMENTARY 5/14/73 CST 11:45 GET T-45:00 MC3/1

PAO This is Skylab Launch Control. T minus 45 minutes and counting. Coming up shortly in our countdown will be checks of the range safety command receivers. These receivers are part of what's called the secure range safety systems aboard the launch vehicle. The Range Safety Officer could terminate the flight of Skylab if it should become erratic by initiating the emergency engine cutoff or, if necessary, the propellant dispersion command. These systems are located on each stage of the Saturn-V and the receivers, two in each stage, receive the signal from the Range Safety Officer and send them through the proper channels to perform the propellant dispersion. Also coming up, as mentioned earlier, will be the very critical power transfer test. Underway right now are checks of radar beacon number 1. Radar beacon number 2 has been checked out; checked out okay. Superintendent of Range Operations just checked in with Chuck Henschel, the Test Supervisor, reported that the Kennedy Space Center area is clear for launch at this time. Weather also continues to look favorable, actually clearing, some clouds in the area, winds from the southeast at 10 knots. Temperature is expected to be about 80 degrees Fahrenheit at launch time. The astronauts for the first manned visit to the Skylab are watching the launch today from a special site here at Kennedy Space Center. The crew commander for that flight, Pete Conrad, and Paul Weitz, the pilot, are watching with their wives and with Joseph Kerwin, from a special site. Mrs. Kerwin is with the parents of astronaut Kerwin, watching from a different site but also at Kennedy Space Center. Just a few moments ago the NASA Administrator, James Webb, came into the firing room. He'll remain here in the firing room through the launch. Countdown continuing to move smoothly. T minus 43 minutes 16 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 11:00 GET T-30:00 MC4/1

PAO This is Skylab Launch Control passing the T minus 30 minute mark; T minus 29 minutes 56 seconds and counting. At this time the orbital workshop stands ready above the Saturn-V vehicle. The power transfer test successfully completed just a few moments ago. A variety of systems in the vehicle all observed during that critical test. All observed to work well on the flight batteries. We're now again using ground support batteries, ground support electricity. We'll go on the flight batteries at approximately 50 seconds in the countdown. Beacon number 1 readout now complete. Both those radar beacons located in the instrument unit of the vehicle now have been completely checked out. The Skylab, as it stands at Pad A, somewhat different in configuration than the Saturns and Apollo Saturns which we're used to seeing. Skylab stands 333 feet - 333.7 feet, whereas the Apollo Saturn V was 363 feet. Of course the Saturn V had the launch escape system on top, whereas the orbital workshop and its payload have a payload shroud covering that. Countdown continuing to move along smoothly. T minus 28 minutes 42 seconds and counting. This is Skylab Launch Control.

END OF TAPE

SKYLAB I MISSION COMMENTARY 5/14/73 CST 12:15 GET T-15:00 MCS/1

PAO This is Skylab Launch Control. We're at T-15 minutes and counting now in our countdown for Skylab I, as we continue to aim for a 1:30 PM Eastern Daylight Time lift-off. At this time, the S-2 or second stage start tanks are being chilled down. These tanks are being chilled to receive the extremely cold liquid hydrogen and liquid oxygen, which will pour into them when there is ignition of the second stage at T plus 2 minutes and 42 seconds into the mission. We continue to replenish those fuels, the cryogenics aboard the launch vehicle. They've been fully loaded, but there is some boil-off that occurs. The liquid oxygen is vented to the atmosphere and can be readily seen venting from the vehicle. Liquid hydrogen is vented to a burn pond where it is burned in a controlled manner. It's almost impossible to see the liquid hydrogen burning during the daylight; it burns so purely. The Superintendant of Range Operations just reported in that there is no change in the earlier reports of tracking camera coverage. He had estimated at that time that the tracking camera at Patrick Air Force Base would get 100 percent coverage; at Cape Kennedy, 90 percent, and then deminishing coverage as we move north. Countdown moving along smoothly. T-13 minutes 45 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 12:21 CST T-10:00 GET MC6/1

PAO This is Skylab Launch Control, T-10 minutes and counting. And the countdown continues to run smoothly as it has throughout the morning. Cryogenics loaded aboard the vehicle. We continue to aim for a lift-off time of 1:30 p.m. eastern daylight time. Now T-9 minutes 45 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 12:00 GET T-30:00 MC7/1

PAO This is Skylab Launch Control passing the 6 minute mark in the countdown now for Skylab 1. Houston Flight reports in that they are GO for going onto the automatic sequencer. At the T minus 3 minute 7 second mark in the countdown, the sequencer takes over and handles the countdown from that point on. From that point on, each event which is carried out by the sequencer must occur in the proper sequence or the sequence would be stopped and the countdown would be stopped at that time. Thrust chamber chilldowns continuing. Emergency detection system has been placed to the launch mode. The instrument unit, known as the brains of the space vehicle, is now in the ready position. Various elements of the launch team now reporting into Chuck Henschel, the test supervisor, that they are GO for launch. Director of Launch Operations, Walter Kapryan, has given his GO for the launch now approaching the 5 minute mark. T minus 5 minutes 8 seconds and counting. This is Kennedy Launch Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 12:27 CST T-3:30 GET MCC/1

PAO This is Skylab Launch Control, T-3 minutes 30 seconds and counting in our countdown for launch of Skylab 1. The Launch Vehicle Test Conductor Norm Carlson just reported to the Test Supervisor Chuck Henschel that they are cleared for launch. Indicating they're ready to go onto the automatic sequencer. Of course, while that sequencer takes over, the team here in the firing room will continue to monitor their various stages and readouts. They would have the capability of over-riding the sequencer if that would be necessary for any reason at all. Firing command is ON, we're on the automatic sequencer as we pass now the 3- minute mark. Some of the events which will be happening now during this final 3 minutes as the sequencer has taken over will be terminating the replenishment of the liquid oxygen and the liquid hydrogen. We've been replenishing these since the loading was completed earlier this morning. The vents will be closed. These tanks will be pressurized so that we can assure ourselves of a full load of fuel and also so that we can assure a proper flow of that fuel down into the engine during flight. At the T-2 minute mark that pressurization is expected to begin. We'll transfer to the flight batteries from our external power source at 50 seconds in the count-down and we'll stay on those flight batteries from 50 seconds on down through the final portion of the count. Approaching the 2-minute mark in our countdown now. MARK. T-2 minutes and counting toward the launch of Skylab 1. At T-30 seconds, swing arms will start coming back. These swing arms give access to the vehicle, and also afford an arm across to the vehicle to carry the propellant and the power to the vehicle. The first stage engines will be building up 7.6 million pounds of thrust at lift-off. Lift-off will follow an ignition at 8.9 seconds. We just passed the 90-second mark in the count-down. At 8.9 seconds in the count we'll expect to get an engine sequence start on the five first stage engines of the five. They'll build up thrust. That thrust will be monitored. The vehicle will be held down for the full 8.9 seconds. And will expect to get lift-off right at T-0. We're approaching the 1-minute mark in our countdown at this time as it proceeds smoothly. MARK. T-1 minute and continuing to count. A water deluge system now has been turned on, activated at the pad area. Pressurization taking place now. The various tanks aboard the vehicle being pressurized. Switching to internal power. All stages switching now to internal power. All propellant tanks being pressurized. Count continuing smoothly. The water at the pad covering the flame deflectors now. We've passed the 30-second mark. Water will also be coming onto the decks of the mobile launcher at the ignition point. T-20 seconds and the countdown continues to go smoothly. Guidance

SKYLAB MISSION COMMENTARY 5/14/73 12:27 CST T-3:30 GET MCC/2

release; T-13, 12, 11, 10, 9, 8, we have had ignition. Sequence has started - 6, 5, 4, 3, 2, 1, 0 and we have a lift-off. The Skylab lifting off the pad now, moving up. Skylab has cleared the tower.

PAO Houston is now controling.

CC Mark 18 seconds, pitch and roll program started. Saturn now maneuvering to it's proper flight path attitude. Mark 25 seconds. Mark 30 seconds, 35 seconds; 1 nautical mile in altitude, looking good. Range Safety gives Saturn a green. We've cleared the beach. Mark 50 seconds, 2-1/2 nautical miles in altitude. The ground display data shows good stable thrust on all five engines. Coming up now on 1 minute. Mark 1 minute. 1 minute 5 seconds, 4 nautical miles in altitude. Coming up now on ... maximum aerodynamic pressure on the vehicle, 1 minute 10 seconds. Roll program complete; pitch profile still in progress. Mark 1 minute 20 seconds, 7 nautical miles in altitude. The velocity now reading 2500 feet per second. Mark 1 minute 30 seconds, passed through max Q, still looking good. Saturn now 11 nautical miles in altitude, 5 nautical miles downrange; velocity now reading 3300 feet per second. 1 minute 45 seconds, all sources continuing to look good. 1 minute 56 seconds, 20 nautical miles in altitude. 2 minutes 10 seconds. 2 minutes 18 seconds. Coming up now on center engine shutdown. Center engine shutdown on time, reports Booster Systems Engineer. 2 minutes 33 seconds, 40 nautical miles in altitude, standing by now for a first stage shutdown. First stage shutdown. Good separation on time. Show good ignition on the five second stage engines. The Saturn now 56 nautical miles in altitude, 64 nautical miles downrange. 9300 feet per second now reading the velocity. The huge first stage falling away now, now out of business. 3 minutes 10 seconds, coming up on skirt SEP. The inner stage has jettisoned on schedule. The 11,400-pound ring dropping away now from the second stage engines. All sources continuing to look good. Mark 3 minutes 33 seconds. The two habitability area vent valves are now open, reports booster, bleeding off nitrogen stored onboard prelaunch. We now show Saturn 88 nautical miles in altitude, 124 nautical miles downrange. Velocity now reading 11,000 feet per second. Looking good, reports Booster. Coming up on 4 minutes. Mark 4 minutes. Mark 4 minutes 10 seconds. Saturn now 108 nautical miles in altitude, 170 nautical miles downrange. Velocity now reading 11,244 feet per second. Mark 4 minutes 30 seconds, still looking at five good second stage engines performing as advertised. Mark 4 minutes 55 seconds. The multiple docking adapter vent valves have closed now at 1.3 pounds per square inch. Mark 5 minutes 10 seconds. Saturn now 143 nautical miles in altitude, 268 nautical miles downrange.

Velocity now reads 12,634 feet per second. Center engine shutdown on time. Good sustained thrust on the remaining four engines. They burn for about 4 more minutes. The timing in this event quite different from Apollo, but this Saturn is carrying a much lighter payload to orbit. The shutdown time to I Saturn is beginning to pitch over for more straight and level flying rather than climbing for altitude. We now show Saturn at 160 nautical miles in altitude, 328 nautical miles downrange. Mark 6 minutes, 170 nautical miles in altitude, 368 nautical miles downrange. Saturn flight path continues good. Saturn now on course, on time. Moving out, headed on it's 50 degree azimuth taking it off the east coast of the United States. We now show Saturn at 402 nautical miles downrange.

END OF TAPE

PAO Mark 6 minutes 30 seconds. Coming up now on propellant utilization shift to - -

PAO Mark 6 minutes 58 seconds. A good propellant utilization shift giving the desired fuel to oxidizer ratio for traveling further into space. Engine performance continues excellent. We now show Saturn at 200 nautical miles in altitude, 518 nautical miles down range.

PAO Mark 7 minutes 30 seconds. The velocity building up now. Saturn now traveling at 17,306 feet per second, heading out now for down range distance. Saturn flying almost parallel to the Atlantic Ocean. We now show an altitude of 213 nautical miles, a down range distance of 620 nautical miles.

PAO Mark 8 minutes. Saturn now 220 nautical miles in altitude, 667 nautical miles down range. Velocity now reads 18,753 feet per second.

PAO Predicted time of shutdown, says Booster, is 5 minutes - or 9 minutes 51 seconds.

PAO A status check in Mission Control by Flight Director, Don Puddy: a GO/NO GO for committing the Saturn for passage over Europe; giving a green on this GO/NO GO. This being passed along to the Range Safety Officer.

PAO We now show 8 minutes 55 seconds, 231 nautical miles in altitude, 831 nautical miles down range.

PAO Trajectory data now puts Saturn traveling beyond Europe.

PAO Mark 9 minutes 15 seconds, 234 nautical miles in altitude, 902 nautical miles down range; velocity now reading 22,906 feet per second.

PAO Mark 9 minutes 30 seconds. Shutdown predicted at 9 minutes 51 seconds; standing by now for S-2 shutdown. We presently show an altitude of 236 nautical miles now on Saturn.

PAO And we've had shutdown and separation. The orbital workshop is now separated from the Saturn. It's now on station ready to deploy its solar arrays, telescope mount, meteoroid protection shield, which will make it an acceptable scientific laboratory for the astronauts for the next 8 months.

PAO The refrigeration system onboard has been activated.

PAO Sequentially, everything going right on schedule at this time.

PAO First raw data reports flight dynamics gives a nominal orbit. We showed a shutdown altitude of 236 nautical miles.

PAO Mark 11 minutes 50 seconds. Time base 4 has started. This is the instrument unit program which keys the timing for all of the up-coming sequential events.

PAO Mark 12 minutes 30 seconds. The workshop is being pitched over now through a gravity gradient maneuver and nosed down toward the Earth for the payload shroud jettison. The shroud splits into four sections by explosive devices for separation. We're about a minute away from that event at this time. We show 12 minutes 50 seconds ground elapsed time.

PAO Latches have been pulled for the shroud jettison. We're at 13 minutes 35 seconds.

PAO Mark 13 minutes 50 seconds after the shroud has jettisoned. The next event to occur will be the Apollo telescope mount deployment. Mark; we're at 14 minutes, standing by, continuing to monitor. This is Skylab Control, Houston.

PAO Mark 14 minutes 30 seconds. Predicted time of payload shroud jettison: 15 minutes 32 seconds or 5 minutes 45 seconds since time base 4 was initiated.

PAO Mark; we're at 15 minutes now, ground elapsed time.

PAO Mark 15 minutes 27 seconds. Booster reports shroud has jettisoned. Shroud has blown away at this time. The next event to occur will be the deployment of the Apollo telescope mount.

PAO Mark; we're at 16 minutes. The discone antennas are now being commanded.

PAO Mark 16 minutes 10 seconds. Should be pulling the latches shortly for the Apollo telescope mount deployment.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 12:47 GET 17:00 MC10/1

PAO Mark. Standing by now for confirmation of ATM deployment. We're 17 minutes 35 seconds. The deployment motors of the Apollo telescope mount now running. This deployment sequence in toto takes about 4 minutes. Deployment being activated by two Apollo telescope mount motors which are presently running. We're 18 minutes 20 seconds now ground elapsed time. The booster now being maneuvered to a solar inertial attitude. We're at 19 minutes 10 seconds ground elapsed time. Mark 20 minutes ground elapsed time. We should be less than a minute away now from deployment. Mark 20 minutes 12 seconds ground elapsed time. Our data displays, Mission Control, now show the ATM has deployed and locked. The Apollo telescope mount has been deployed and securely latched. The 24,500 pound ATM reaching out now at a 90 degree angle from the orbital workshop. We're at 20 minutes 35 seconds. We've had confirmation. We have data here in Mission Control that the ATM has deployed and latched. Mark 20 minutes 50 seconds. The next event to occur will be the deployment of the four wings of the telescope mount solar array system. We're standing by now for that deployment. Mark, we're at 21 minutes 40 seconds ground elapsed time. Preliminary tracking data shows an orbit for the orbital workshop of 237 nautical miles by 236.3 nautical miles near circular. We repeat 237 nautical miles by 236.3 nautical miles. We're at 24 minutes 30 seconds now ground elapsed time. Continuing with the solar inertial maneuver, reports booster. Twenty-five minutes ground elapsed time. We've got 1 minute until loss of signal with Madrid. Mark, we're 25 minutes 45 seconds. The deployment motors have been turned on. The solar array system wings on the Apollo telescope mount are now extended. Standing by, continuing to monitor.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 12:57 GET 27:00 MC11/1

PAO Mark we're at 26 minutes 30 seconds under acquisition now by an ARIA aircraft following loss of signal with Madrid. Okay, all four Apollo telescope mount solar array wings are out and securely locked. Mark we're 27 minutes 20 seconds now ground elapsed time. The Apollo telescope mount has been deployed and securely latched. The solar array system for the telescope mount, the four wings, has been deployed and securely locked. The next thing we should be seeing in Mission Control - We'll be receiving telemetry data from the telescope mount and this should occur within the next several minutes. We are presently receiving data through an ARIA aircraft beyond Madrid tracking station. Mark 28 minutes 10 seconds. We now show an orbit of 237.1 nautical miles by 236.6 nautical miles for the orbital workshop. Mark 29 minutes 20 seconds. We've had some dropout in data from the ARIA aircraft, presently showing static displays in Mission Control. The procedures officer here working to get locked up on the data at this time. We're at 29 minutes 40 seconds ground elapsed time. We repeat that the Apollo telescope mount has been deployed. The solar array system from the telescope mount also deployed at this time. The next deployment to occur will be the solar array system for the workshop. Mark 32 minutes ground elapsed time. We presently show an orbit of 237.1 nautical miles by 236.8 nautical miles for the orbital workshop now in its first revolution. Mark 34 minutes 20 seconds ground elapsed time. Flight Director Don Puddy speaking to his flight control team in mission control saying everything looks good up to this point. We're standing by now for definite indication through ARIA aircraft of receipt of telemetry data from the Apollo telescope mount. We're now at 34 minutes 40 seconds ground elapsed time. Continuing to monitor. This is Skylab Control, Houston.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 13:07 GET 36:00 MC-12/1

PAO This is Skylab Control, Houston, at 36 minutes ground elapsed time, still standing by for a definite indication of receipt of telemetry from the Apollo telescope mount. Following this we will see the deployment of the meteoroid shields and the deployment of the solar array system wings aboard the workshop. Thus far, we've seen the successful activation of the Apollo telescope mount as well as the solar array system for that mount. We're at 36 minutes 35 seconds, continuing to monitor. This is Skylab Control, Houston.

PAO This is Skylab Control, Houston; 41 minutes ground elapsed time. We presently show an orbit of 236.2 nautical miles by 237 nautical miles. We are some 12 minutes 26 seconds away now from acquisition Carnarvon at which time we should be able to verify telemetry being received from the Apollo telescope mount. This is Skylab Control, Houston, at 41 minutes 35 seconds ground elapsed time.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 13:24 GET 53:00 MC13/1

PAO Skylab Control, Houston, at 53 minutes ground elapsed time. We're less than a minute away now from acquisition by Carnarvon tracking. We'll keep the line open. Stand by, continue to monitor. A quick status check in Mission Control by a Flight Director, Don Puddy, led him to say everything looks "super good" so far. We presently show an orbit based on increased tracking data of 236.5 nautical miles by 236.2 nautical miles. Standing by continuing to monitor. This is Skylab Control, Houston. We are now acquiring data through Carnarvon. Booster reports the vehicle is now in solar inertial attitude. We are now receiving telemetry data from the Apollo telescope mount. The Environmental Officer reports the data receiving looks good. The habitation area vent valves have been closed as scheduled. We're now at 55 minutes ground elapsed time. This is Skylab Control, Houston.

END OF TAPE

PAO Skylab Control, Houston, at 59 minutes ground elapsed time. We have no confirmation yet on the deployment of the airlock solar array system. We'll stand by and continue to monitor at 59 minutes ground elapsed time. This is Skylab Control, Houston. Skylab Control, Houston, at 1 hour 4 minutes ground elapsed time. We're less than a minute away now from acquisition by Honeysuckle. This will be a very short acquisition time, some 1 minute 11 seconds. Following Honeysuckle, the next station to receive data will be Texas, and that would be 30 minutes 30 seconds from this time. We're now at 1 hour 4 minutes ground elapsed time. Continuing to monitor, this is Skylab Control, Houston. We have acquisition through Honeysuckle at this time. We're 1 hour 5 minutes ground elapsed time. Skylab Control, Houston, at 1 hour 7 minutes ground elapsed time we've passed out of station contact with Honeysuckle at this time. The next station to acquire will be Texas at 27 minutes 42 seconds from this time. We've still received, through data, no definite indication on the airlock solar array system deployment; however, this pass, as well as Carnarvon, was through darkness and the Sun will be the first definite way of giving an indication as to whether or not the airlock module solar array system has been deployed. We would expect to take a good hard look at this through our first stateside pass. We're now at 1 hour 7 minutes ground elapsed time. This is Skylab Control, Houston.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 14:05 CST 1:34 GET MC15/1

PAO This is Skylab Control, Houston, at 1 hour 34 minutes ground elapsed time. Less than a minute away now from acquisition by Texas. We show an orbit of 237.1 nautical miles by 236.2 nautical miles. To quickly recount what we've seen during this first revolution of the workshop orbit. The payload shroud jettisoned on schedule. The ATM Apollo telescope mount has deployed. The solar array system for the ATM has also deployed. We have no indication yet on the deployment of the two solar array wings attached to the workshop. We will look at this - at display data for about 10 minutes under sunlight on this stateside pass to endeavor to confirm or not confirm that deployment. Given a nonconfirmation, of course, backup commanding could be necessary from the Control Center. We're at 1 hour 35 minutes ground elapsed time. This is Skylab Control, Houston.

PAO Skylab Control, Houston, 1 hour 38 minutes ground elapsed time. Flight Director, Don Puddy, talking to the Booster System Engineer here in Mission Control. We have no indication of deployment of the workshop solar array system wings. No indication of deployment of those wings. The Booster now going through some backup command procedures. We've also had an indication of partial deployment of the meteoroid shield. We're at 1 hour 39 minutes ground elapsed time, continuing to monitor. This is Skylab Control, Houston.

PAO Skylab Control, Houston. Now 1 hour 40 minutes ground elapsed time. The orbital workshop now on it's first stateside pass since launch and insertion into orbit. We are presently looking at the orbital workshop solar array system. No indication at this time of deployment. The Booster Systems Engineer here in Mission Control going through backup procedures to issue a command for deployment. Standing by, continuing to monitor. This is Skylab Control, Houston.

PAO Skylab Control, Houston, now 1 hour 46 minutes ground elapsed time. Continuing to monitor on this first stateside pass, the orbital workshop. Again, we repeat the orbital workshop solar array system wings have not deployed. Command procedures are being followed presently on the ground by the Booster Systems Engineer. Standing by, continuing to monitor. This is Skylab Control, Houston.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 14:20 GET 1:48 MC16/1

PAO Skylab Control, Houston, now 1 hour 53 minutes ground elapsed time. Receiving good data now through Newfoundland. Booster at this time issuing commands to the workshop. To repeat what we said earlier, the orbital workshop solar array system wings have not yet deployed. Standing by, continuing to monitor. This is Skylab Control, Houston. Skylab Control, Houston, 1 hour 57 minutes ground elapsed time. We now have acquisition with Madrid. Standing by, continuing to monitor. This is Skylab Control, Houston.

END OF TAPE

PAO Skylab Control, Houston, at 2 hours 7 minutes ground elapsed time. We've passed out of acquisition with Madrid tracking. The commanding by the booster systems engineer was verified. The commands did get in; however, we still have no indication of deployment of the orbital workshop solar array system wings. It is known, of course, that the commands did get in. At the present time, however, with the Apollo telescope mount solar array system deployed successfully, we do have a power system to support the vehicle. We're now at 2 hours 8 minutes ground elapsed time and this is Skylab Control, Houston.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 CST 15:12 GET 2:41 MC18/1

PAO This is Skylab Control. Two hours 41 minutes ground elapsed time in the mission of Skylab 1. Skylab space station now in orbit, coming up on the Honeysuckle, Australia, tracking station. Still some doubt in the minds of Flight Controllers here in Mission Control as to whether the main solar panels on the workshop have indeed deployed. They have had no confirmation on the ground from telemetry that this is the case; the solar panels on the telescope mount have deployed normally. Also, the micrometeoroid shield around the workshop has partially deployed. The large wings of three sections of solar panels on each wing, one on each side of the workshop, generate anywhere from 51 to 125 volts depending on the Sun angle at the time. This power goes through chargers which in turn keeps storage batteries in the workshop built up to supply power throughout the mission, half of each orbit approximately is in darkness when no power can be generated by the solar panels. The two solar panel wings are deployed out to the side of the workshop, and each panel on the wings operates similar to a scissors action. It's spring loaded to extend the panels. We should be getting data now through Honeysuckle. We'll stand by for comments to the Flight Director from the Flight Controllers who are concerned with the workshop electrical power system, and relay this information as it - No change reported in the solar panel wing status.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 15:27 CST 2:56 GET MC19/1

PAO This is Skylab Control. Three minutes 2 hour - Three hours 2 minutes ground elapsed time, and the mission of Skylab 1. Skylab space station now being tracked by the Hawaii tracking station. Waiting for the systems engineers to report the space station status back to the Flight Director as the data comes in.

PAO It appears that a plan will be formulated later on in the day and this evening by which the existing available power coming into the Skylab workshop will be conserved to the greatest extent, on the assumption that we may not be able to get the main solar panels deployed. We'll continue to standby the remainder of the Hawaii pass, which is a fairly low elevation angle. Coming up in a few moments to Goldstone, in approximately 5-1/2 minutes for a fairly lengthy stateside pass over the tracking stations in the contintental United States. At 3 hours 5 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 15:41 CST 03:10 GET MC20/1

PAO This is Skylab Control, 3 hours 10 minutes, ground elapsed time. Acquisition of signal over Goldstone Tracking Station for the second stateside pass after launch. We'll stand by here as the data comes in for any further developments in the situation in which the main solar panels on the workshop apparently have not deployed.

END OF TAPE

SKYLAB MISSION COMMENTARY 4/14/73 15:56 CST 3:24 GET MC-21/1

PAO This is Skylab Control. Three hours 31 minutes, ground elapsed time. Skylab space station presently crossing over the combined coverage of Canary Island tracking station and Madrid, Spain, tracking station. Flight Controllers, here, continuing to assess the possible effects on the mission on the apparent nondeployment of the large solar panels on the workshop. As the afternoon and evening wears on, there likely will be some considerable amount of sorting out as to what course should be taken to get the most out of the mission. As these facts develop, as the plans are worked out, they will be relayed on over the circuit at 3 hours 32 minutes, ground elapsed time, with some 5 minutes and a half remaining over Madrid. And, standing by; this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 15:00 CST 16:10 GET 3:39 MC22/1

PAO This is Skylab Control, 3 hours 42 minutes, ground elapsed time. Skylab space station now over the hill from the Canary Island tracking station. Thirty-four minutes away from being acquired again by the Honeysuckle, Australia, tracking station. No further resolution at this time on the solar panel deployment problem, which likely will affect the course of the mission. As the planning develops, on how to best manage the mission for the maximum return, we'll bring these details to you on this circuit. And, at 3 hours 40 minutes, ground elapsed time, on the mission of Skylab 1, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 16:42 CST 4:11 GET MC-23/1

PAO This is Skylab Control. Four hours 14 minutes ground elapsed time - the Skylab space station mission. Here in the Control Center, the problems associated with the failure of the Saturn workshop solar panels to deploy are being discussed, at some length, by management and flight controllers. Preliminary telemetry indications are that there could have been a malfunction with one solar array beam fairing and the meteroid shield, which could have led to such anomalies. These malfunctions are indicated to have occurred 1 minute and 3 seconds after lift-off, based on postlaunch examination of telemetry.

PAO The planned 28-day mission is not possible without deployment of the workshop main solar panels. Project officials are considering an alternate mission using the command service module power system to augment the limited power supply provided by the Apollo telescope mount solar panels aboard the workshop, through a system of managing the two power sources for the optimum usage. An announcement will be made as soon as these decisions have been reached. The decision on such an alternate mission is expected to be had by about 9:00 p.m. eastern daylight time, at which time a news conference will be held at the Cape. And it is expected that Skylab Program Director, Bill Schnieder, will take part. We're starting to get data, now, through the Honeysuckle, Australia tracking station. This is a rather low elevation angle pass of little over 4 degrees, or approximately - I stand corrected, 86 degrees, the max elevation on this particular pass, almost directly overhead, at Honeysuckle. Almost 9 minutes remaining in this pass across Honeysuckle station. We'll stand by on Skylab Control circuit for the Honeysuckle, followed by Hawaii, and the next stateside pass. At 4 hours 18 minutes ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 13:00 CST 16:57 GET 4:26 MC24/1

PAO This is Skylab Control at 4 hours 28 minutes ground elapsed time, as the Skylab workshop heads across the south-central Pacific toward the Hawaii tracking station - coming up in about 8 minutes over that station. To reiterate what was stated before about the current situation in the Skylab-1 mission, preliminary telemetry playback indications are there could have been a malfunction with one solar array beam fairing. That is the cover that is - that houses the solar array beam before it swings outward from the workshop itself. And the meteoroid shield, which could have led to the subsequent anomalies that have been witnessed this afternoon. And, namely, the failure of the large solar panels to properly deploy. The malfunction was measured to have taken place 1 minute and 3 seconds after lift-off, based on examination of the telemetry records and tapes played back post-launch. Now, the current posture in the mission is as follows: the planned 28-day mission is not possible without full deployment of the solar panels on the workshop. At the same time, all the other workshop systems and deployment sequences are fully nominal. Project officials are considering an alternate mission, using the power supply aboard the command service module to augment, or supply additional power to the workshop, through managing of the various electrical buses aboard. The ATM solar panels are deployed, and are generating power. This power supply, tied with that brought up by the command module when it docks with the workshop, would supply power for a reduced mission. However, an announcement will be made as soon as a decision on how the mission will be managed. This decision on alternate mission is expected by about 9 o'clock Eastern Daylight Time. Our news conference at Kennedy Space Center newsroom, with Skylab Program Director, Bill Schneider, will take place at this time. Five minutes out from Hawaii, and at 4 hours 32 minutes, ground elapsed time. This is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 17:12 CST 04:41 GET MC25/1

PAO This is Skylab Control, 4 Hours 48 minutes, ground elapsed time. Skylab space station now being tracked by the Goldstone tracking station in the Mohave Desert, California. No apparent change in the mission status at this time. The large solar panels on the workshop still undeployed. And among the considerations to be looked at later in the evening by the Mission Director and other members of management on the Skylab team, will be whether or not to launch Skylab 2 on schedule tommorow, or to delay the manned mission until some later time, after a new flight plan for a shortened mission can be formulated and designed. At 4 hours 49 minutes, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 17:45 CST 05:14 GET MC26/1

PAO This is Skylab Control, 5 hours 14 minutes, ground elapsed time, in the mission of the Skylab space station, presently over the Canary Island tracking station. Some 3 minutes remaining until loss of signal, crossing over into Ascension Island tracking station coverage. At 5 hours and 9 minutes, ground elapsed time, it was reported that the Skylab workshop has settled down into solar inertial attitude, that is, that the Apollo telescope mount portion points at the Sun continuosly. To recap again the current posture in this mission, it appears that a malfuntion in one of the fairings covering the solar arrays on Saturn workshop may have malfunctioned at about a minute and 3 seconds after lift-off. Playback of the telemetry data has shown that there was an apparent malfunction of this fairing, also, the meteoroid shield malfunctioned at the same time. As it stands now, the planned 28-day mission for Skylab 2, still scheduled for launch tomorrow, at this time, would not be possible for the full 28 days without deployment of the workshop solar panels. Skylab program officials are looking at all of the alternate missions that would be feasible and possible to conduct. The main guiding factor would be the amount of electrical power available from the fully deployed, and presently generating Apollo telescope mount solar panels, put together with the power available from the command service module, when it docks with the cluster. The decision on whether to continue with a somewhat abbreviated mission tomorrow on schedule, or whether a delay is necessary to regroup, will be made later in the evening. Decisions on alternate missions, on an abbreviated mission, is expected around 9:00 eastern daylight time. A news conference with Skylab Program Manager, Bill Schneider, is expected to take place at 9:00 o'clock eastern time at the Kennedy Space Center newsroom. That is currently the status in the mission of Skylab 1, the Skylab space station. And at 5 hours 18 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 1:10 CST 18:04 GET 5:32 MC27/1

FAO This is Skylab Control at 5 hours 32 minutes, ground elapsed time, in the mission of Skylab 1, currently over the southern tip of the African continent. There's been a change in the expected time of the press conference with Skylab Program Director, Bill Schneider, Cape Kennedy newsroom. It will now be no earlier than 10 p.m. eastern daylight time, instead of the earlier predicted 9 p.m. That is a 1 hour delay in the press conference with Skylab Program Director, Bill Schneider, at Kennedy Space Center newsroom. At 5:33, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 18:45 CST 6:15 GET MC28/1

PAO This is Skylab Control, 6 hours 15 minutes into the mission of Skylab 1. A little over a minute, now, until acquisition at the Hawaii tracking station. A matter of interest on this pass on Hawaii will be some attitude excursions that were noticed just as we left Honeysuckle station, where the vehicle apparently drifted off inertial - solar inertial attitude. As we come across Hawaii, the gyros aboard the spacecraft and the spacecraft attitude will be examined closely by telemetry to see if the vehicle has returned to the desired attitude, or whether it's still drifting. To repeat again an earlier announcement, the press conference with Skylab Program Director, Bill Schneider at Kennedy Space Center newsroom has been delayed to no earlier than 10:00 p.m. eastern daylight time. That would be 9:00 p.m. central. We'll stand by here as the Skylab workshop attitude problem is sorted out during this Hawaii pass and the subsequent stateside pass. At 6:16 ground elapsed time, this is Skylab Control.

PAO This is Skylab Control. The guidance controller here in the control room has confirmed that the vehicle has returned to solar inertial attitude. However, there are some apparent problems in some of the gyros which control the spacecraft attitude. Flight controllers are continuing to sort out these problems at this time. Some 2 minutes remaining until we have loss of signal at Hawaii, 9 minutes out of Goldstone for a stateside pass on this fourth revolution of the Skylab space station. At 6:19 and standing by, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 20:15 CST 7:45 GET MC29/1

PAO This is Skylab Control, 7 hours, 44 minutes ground elapsed time. Skylab orbital workshop presently over the Guam tracking station, with some 5 minutes remaining during this pass over the Western Pacific. Skylab Program Director Bill Schneider has issued the following statement. "The launch of Skylab 2, the manned launch, has been recycled for 5 days to Sunday, May 20, because of the incidents which occurred during the Skylab 1 deployment. The recycling will permit further evaluation of alternative flight plans to maximize scientific returns from the Skylab mission." Program Director Bill Schneider will hold a press conference at 9 p.m. central daylight time at Kennedy Space Center newsroom. At the Houston end, the Flight Director, who has been on the flight director console during most of the day, Don Puddy, will take part in the small briefing room in the building 1 news center at Johnson Space Center. To repeat the statement issued by Skylab Program Director Bill Schneider: "The launch of Skylab 2 has been recycled for 5 days, to Sunday, May 20, because of the incidents which occurred during Skylab 1 deployment. This will permit further evaluation of alternative flight plans to maximize scientific returns from the Skylab mission." Some 45 minutes away from the press conference, 9 p.m. central, 10 p.m. eastern daylight time, with participants at Houston and Kennedy Space Center. We understand that the prime crew of Skylab 2, will return to Houston tomorrow. At 7 hours 47 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 20:47 CST 08:15 GET MC30/1

PAO This is Skylab Control, 8 hours 15 minutes, ground elapsed time, in the Skylab 1 mission. Skylab orbital workshop presently over the Texas tracking station, nearing the end of the fifth Earth orbit. Reminder to newsmen, both at Kennedy Space Center and Houston, some 15 minutes away from a press conference, which will have participants at both ends, Houston-Cape line. Skylab Program Director Bill Schneider will be at Kennedy Space Center; Flight Director Don Puddy and Gene Kranz, who's chief of the Johnson Space Center Flight Control division will take part in Houston. The oncoming Flight Director, Milt Windler, went around the room, talking to the flight controllers and asking them to examine ways to get the most out of a reduced power situation for the modified mission, which will be resumed on the delayed launch of Skylab 2. To repeat the earlier statement by Skylab Program Director Bill Schneider, "The launch of Skylab 2 has been recycled for 5 days to Sunday, May 20, because of the incidents which occurred during Skylab 1 deployment. This will permit further evaluation of alternative flight plans to maximize scientific return from the Skylab mission " The prime crew for Skylab 2 will return to Houston, Tuesday morning. Thirteen minutes until the press conference starts and at 8 hours 18 minutes, ground elapsed time, this is Skylab control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 23:00 CST MC31/1

PAO This is Skylab Control. Ten hours 30 minutes ground elapsed time. The mission of Skylab 1 presently off the southern tip of the African continent and the island of Madagascar. At the beginning of the seventh earth orbit or revolution, which ever term you prefer. The cabin pressurization sequence, which had been underway, has been terminated for the time being to allow some thermal responses to balance out. We have no estimate yet as to when the pressurization will be resumed. But at the time the sequence was stopped over the Vanguard tracking ship which is hove to off the southeast coast of South America, the pressure was at 1.9 pounds in the habitable area of the Skylab space station. We're some 51 minutes out now from the next station which will be Goldstone. The next two REVs, there will be only Hawaii and Vanguard which will track the spacecraft. Flight director Milt Windler is having numerous conversations with the individual flight controllers and sorting out how best to manage the resources available. Still tracking the gyro problems in the ATM guidance system. And at 10 hours 32 minutes ground elapsed time this is Skylab Control.

END OF TAPE

PAO This is Skylab Control at 11 hours 20 minutes. During the last few minutes here in Mission Control, Flight Director Milton Windler has accepted a recommendation from the Marshall Space Flight Center to make an attitude change in the Skylab workshop. This change will, in effect, change the attitude or the angle at which the Sun is shining on the side of the workshop. Now what we're finding is that as a result of the loss of the micrometeorite shield or panels, the thermal characteristics of the workshop now are different than had been planned. Normally, with those micrometeorite shields in place, they are coated with a coating that reflects sunlight. The workshop itself is not coated with the same reflective materials. Consequently, the amount of solar energy absorbed is higher and we're watching an increase in the temperature. There is no concern in that temperature increase at the present time, but in order to keep it from going beyond acceptable limits, the workshop will be placed in an attitude that directs the Sun more toward the end of the vehicle, the end at which the command module would be docked once the rendezvous and docking is accomplished. At the present time, the workshop is in an attitude with the Sun shining directly on the solar panels of the ATM, the Apollo telescope mount, this also places the Sun shining directly on the side of the workshop. The plan is to pitch up about 90 degrees, again placing the Sun more toward the end of the multiple docking adapter, to stay in this attitude for one revolution and then to pitch back 45 degrees in a compromise attitude which continues to reduce the amount of solar energy absorbed by the workshop, but also places the solar panels in more of an opportune position to provide the electrical current necessary for operating the vehicle and reducing any unnecessary drain on the batteries. This maneuver is going to be performed over Goldstone. We're about 15 seconds now from regaining radio contact with the workshop over the Goldstone tracking station. It will take about 13 minutes maneuvering with the attitude control system to place the vehicle in the desired attitude. We're standing by for confirmation that the attitude change has begun. We expect that to begin momentarily. This is Skylab Control, we have a relatively low elevation pass over Goldstone; we're waiting for a good solid telemetry lockup before the command is initiated to begin that attitude change. We're getting solid data now and we're getting a recommendation to go ahead and attempt to command the attitude change. We have about 1-1/2 minute of acquisition remaining at Goldstone. Once this command is initiated, the 13 minute maneuver is an automatic maneuver. This is Skylab Control, we've had loss of signal through Goldstone without getting the command initiated to make that attitude change. We did not get the solid data from the ATM that we thought we needed to initiate that maneuver,

and we'll take a look at the situation over Vanguard, however, scheduled to acquire there in about 17 minutes. And we'll attempt to get the necessary data lockon and get the command initiated at that point. This is Skylab Control at 11 hours 31 minutes.

END OF TAPE